# SLT Series

## Digital Video Recorder

## User's Manual ver.1.1

Quick

This user's manual provides information on the basic functions (such as record, play and install) of DVR for general users. Please see Advanced User's Manual for detailed information.

# WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and Maintenance (servicing) instructions in the literature accompanying the appliance.

## COMPLIANCE NOTICE OF FCC:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS B DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGEY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

**CAUTION:** CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER’S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

# Important Safeguards

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Cleaning

Unplug this equipment from the wall outlet before cleaning it. Do not Use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments

Never add any attachments and/or equipment without the approval of The manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

5. Water and/or Moisture

Do not use this equipment near water or in contact with water.

6. Accessories

Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

7. Power Sources

This equipment should be operated only from the type of power source Indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

8. Power Cords

Operator or installer must remove power and TNT connections before handling the equipment.

9. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

10. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

11. Objects and Liquids

Never push objects of any kind through openings of this equipment as They may touch dangerous voltage points or short out parts that could Result in a fire or electric shock. Never spill liquid of any kind on the Equipment.

12. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

13. Damage requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:
A. When the power-supply cord or the plug has been damaged.
B. If liquid is spilled, or objects have fallen into the equipment.
C. If the equipment has been exposed to rain or water.
D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
E. If the equipment has been dropped, or the cabinet damaged.
F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

14. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

15. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

16. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

17. Correct Batteries

Warning: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

18. Tmra

A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

19. Elevated Operating Ambient Temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

20. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

21. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

22. Circuit Overloading

Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

23. Reliable Earthing (Grounding)

Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct conections to the branch circuit (e.g., use of power strips).

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# 1 — Cautions for Safety

1.1 Follow these instructions to keep the user safe and prevent property damage.
Read them carefully before the use of the product.
The responsibility falls on the user to install and use the product properly.

### 1.1.1 Power Source-related

① Insert the power plug fully and firmly into the power source.
- Unstable connection may cause fire.

② Do not use a damaged power cord, plug or loose outlet.
- It may cause electric shock or fire.

③ Do not plug several devices exceeding the rated capacity into a single outlet.
- Abnormal heat generation at the outlet may cause fire.

④ Do not bend nor pull the power cord. Do not place a heavy object on top of it.
- It may cause electric shock or fire.

⑤ When unplugging the power cord, do not pull it out by touching the cord area or do not touch it with a wet hand.
- It may cause electric shock or fire.

### 1.1.2 Installation-related

① Do not place candlelight or cigarette light on top of the product or do not install the product near heating devices.
- It may cause fire.

② Do not place the power cord near heating devices.
- The exterior of the cord may peeled off, causing electric shock or fire.

③ Do not install the product in a place where a large amount of oil, smoke or moisture exists. Do not install the product in a vehicle or a place where water is splashed.
- It may cause electric shock or fire.

④ Do not place the product on top of an unstable cart, stand or table. Do not block the air ventilation with table cloth or curtain.
- Internal temperature rise may cause fire.

⑤ Do not install the product in a narrow place. Keep the product a certain distance away from the wall.
- Internal temperature rise may cause fire.

### 1.1.3 Cleaning and Usage-related

① Unplug the power plug during lightning, thunderstorm or when not in use for long periods of time.
- It may cause electric shock or fire.

② When taking the battery out from the remote control, keep them away from children to prevent from swallowing incidents.
Keep the battery away from babies.
- If a child swallowed the battery, immediately consult a doctor.

③ Do not place the container or base filled with water, liquids, chemicals, small piece of metal and heavy object on the product.
- If liquid flows into the product, it may cause electric shock or fire. A heavy object may drop from the top of the product, causing injury.

④ Do not use or store the product near combustible sprays and other flammable substances.
- It may cause explosion or fire.

⑤ If dust or water is present at the power plug's pin and contact area, wipe out the area.
- may cause electric shock or fire.

⑥ When cleaning the product, unplug the power cord and gently wipe using a soft cloth. Do not directly spray water on the product or do not use benzene, thinner or alcohol when cleaning.
- It may cause electric shock or fire.

⑦ When replacing the battery, be sure to check the correctness of the polarity (+,-).
- If the battery polarity is wrong, generation of abnormal heat or leakage of internal liquid may cause fire, injury or contamination in the surrounding area.

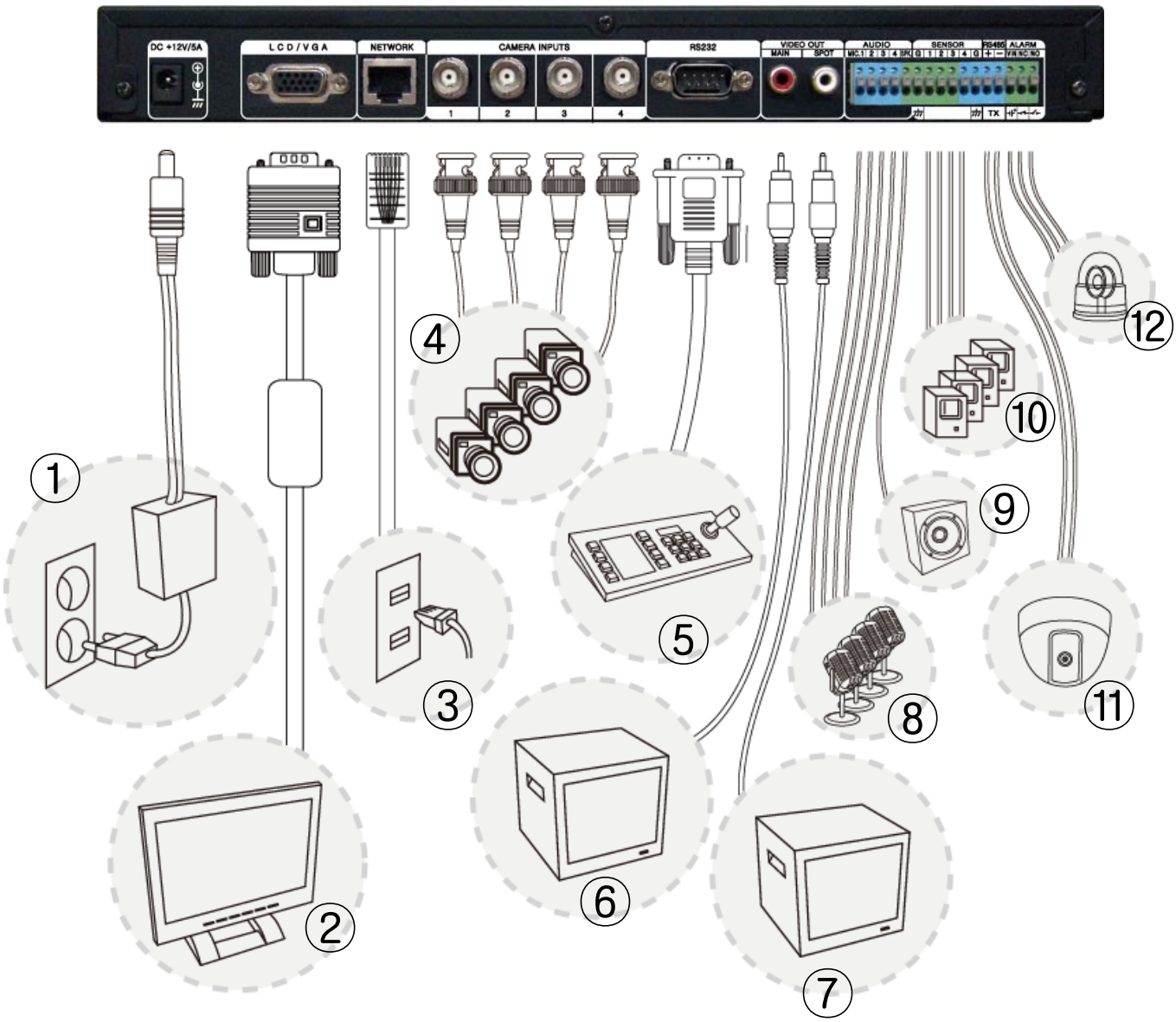
⑧ In case the product was dropped or the case was damaged, switch off the product and unplug the power cord. Have a technician repair the product..
- If the damaged product is used without repair, it may cause electric shock.

⑨ Do not repair or disassemble the product by yourself or do not connect other connection devices without the manufacturer's approval.
- If repair is required, contact the reseller. Failure to follow this instruction may cause electric shock or fire.

# 2 — Product Configuration

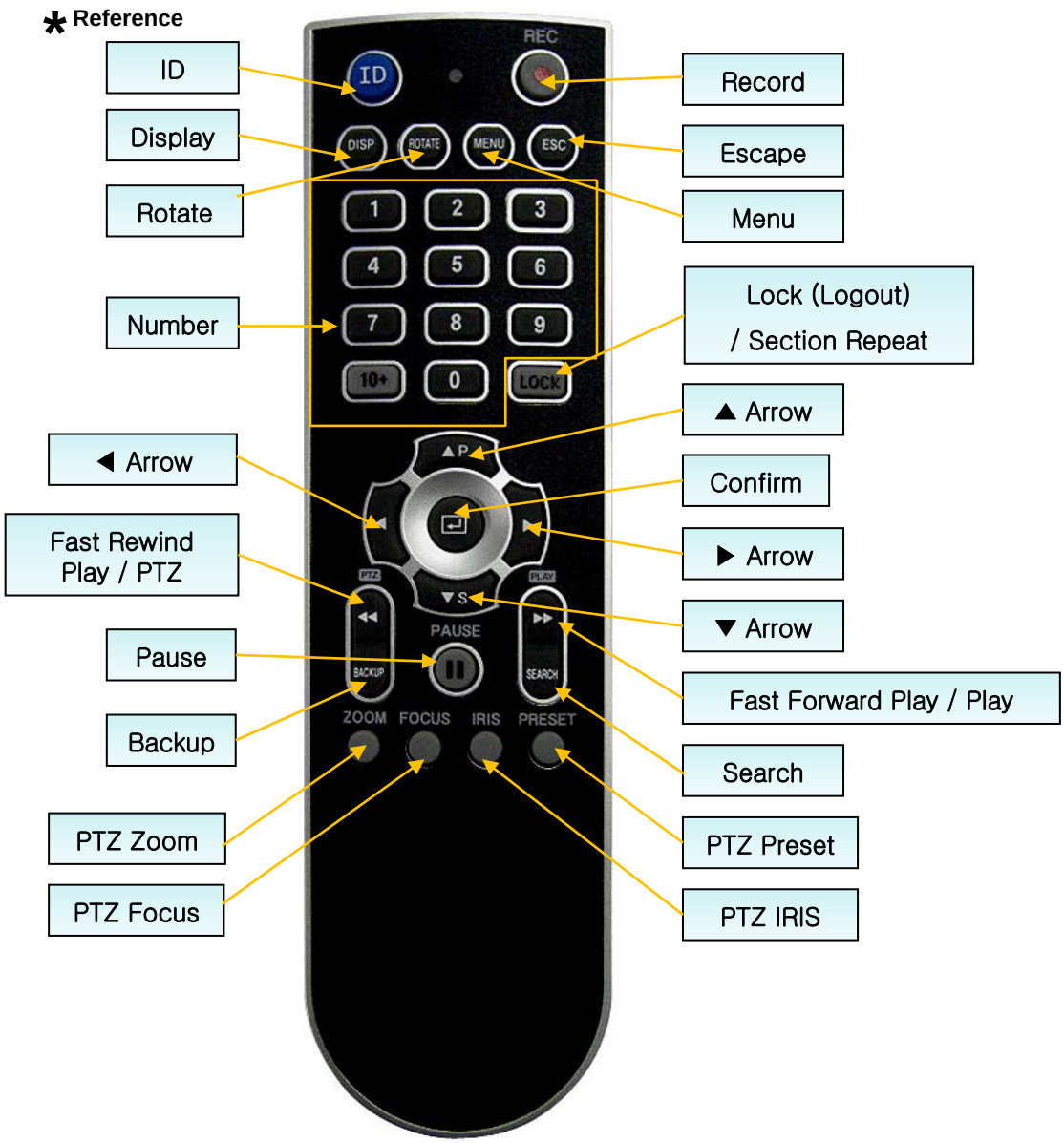
## 2.1 Front/Side Panel Configuration and Connection

## 2.2 Rear Panel Configuration




① DC Power Input
② LCD/VGA Monitor Output
③ RJ45 Ethernet Port
④ Camera Input
⑤ RS232 (PTZ Camera Keyboard)
⑥ Main Monitor Output
⑦ SPOT Monitor Output
⑧ Audio Input (Mic)
⑨ Audio Output (Speaker)
⑩ Sensor Input
⑪ RS485 (PTZ Camera)
⑫ Alarm Output

# 2.3 ID Remote Control




✱ ID Setup Procedure

① Before setting up the remote control ID, set up the unit address of DVR. (The initial value is 0.)

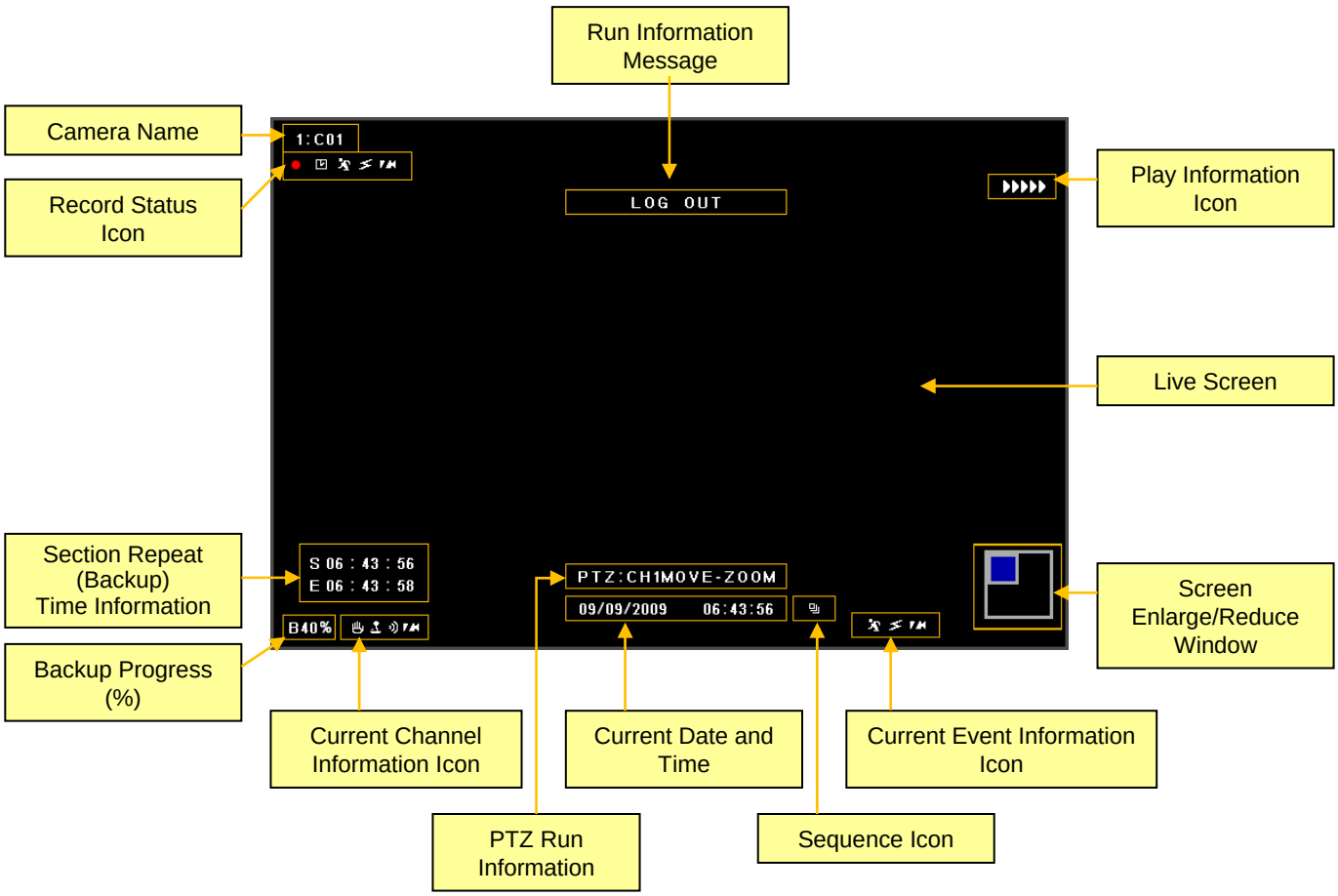
② While pressing and holding down the ID button, enter a two-digit unit address of the corresponding DVR.

③ If the unit address is a single digit, enter a two-digit number by adding the number 0 as the first digit.
( Example – If the unit address is '1', the input value is '01'.)

**※ A single remote control can change ID from 0 to 19, and independently control up to 20 DVRs.**

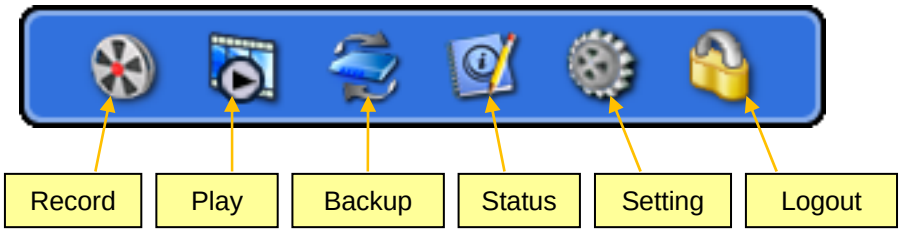
# 3 — Screen Configuration

## 3.1 Live Screen Configuration



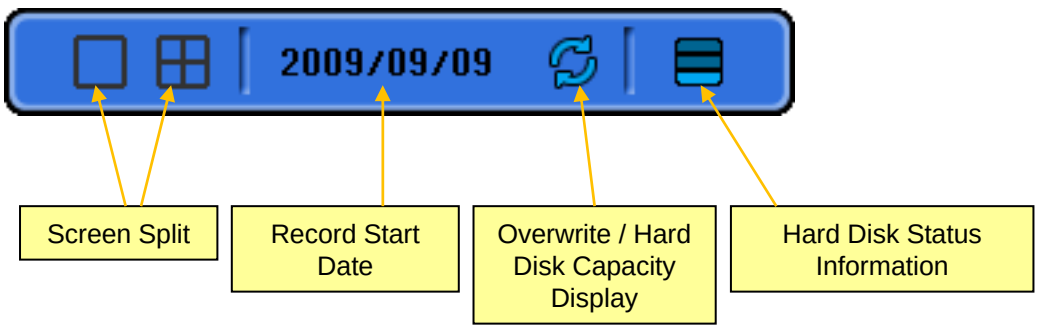

- Record Icon (Red)
  In case of recording at the live screen
- Play Icon (Blue)
  In case of play screen
- Time Icon
  In case of recording by designating time
- Motion Icon
  In case of motion occurrence
- Sensor Icon
  In case of alarm occurrence
- Video Loss Icon
  In case there is no video input
- Audio Icon
  In case sound is generated at the live screen
- Freeze Icon
  In case the live screen is paused
- Sequence Icon
  In case the screen is played sequentially

## 3.2 Top Menu Configuration




※ Setting is a menu for the administrator.

## 3.3 Bottom Menu Configuration




**※ Hard Disk Status**

**1. Normal (Blue)**

- Capacity 0%~30% or less

- Capacity 60%~90% or less

- Capacity 30%~60% or less

- Capacity 90%~100% or less

**2. Abnormal (Red)**

- Capacity 0%~30% or less

- Capacity 60%~90% or less

- Capacity 30%~60% or less

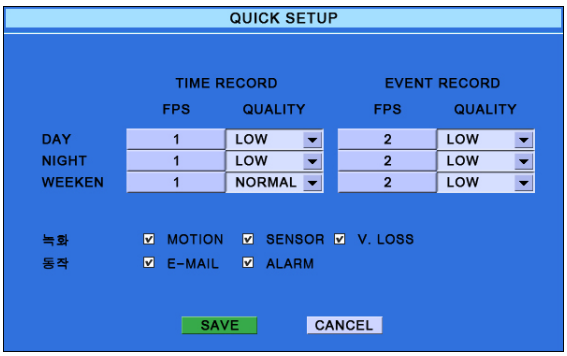
- Capacity 90%~100% or less

# 4 — Procedure to Record

## 4.1 Recording Using Remote Control

4.1.1. Description on procedure to record using remote control

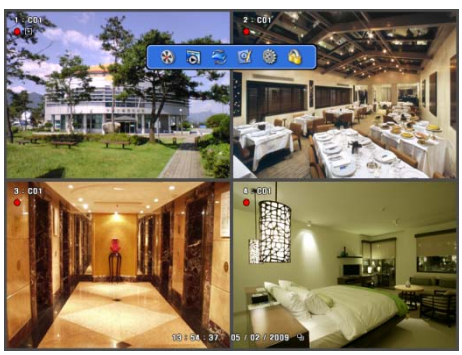
① Press the [▲P] button in the remote control at the live screen.
② After selecting the record icon in the menu shown at the top of the screen, press the [ ↵ ] button.
③ After setting up at the quick setup window, select the save button and press the [ ↵ ] button.

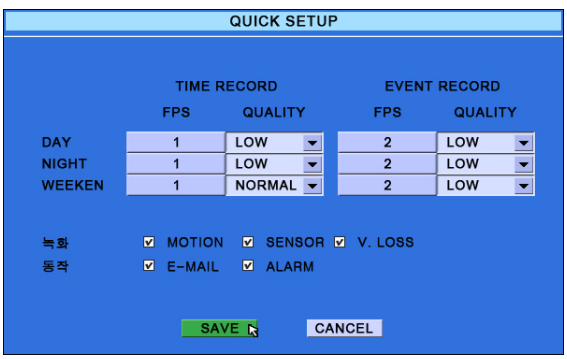



## 4.2 Recording Using Mouse

4.2.1. Description on procedure to record using mouse

① At the live screen, move the mouse cursor to the top area of the screen.
② After placing the cursor on the record icon in the menu shown at the top of the screen, click the left mouse button.
③ After setting up at the quick setup window, place the cursor on the save button and click the left mouse button.





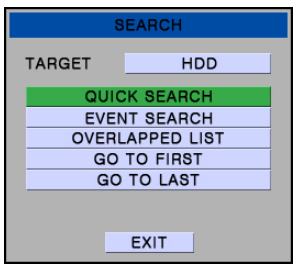
# 5 — Procedure to Play

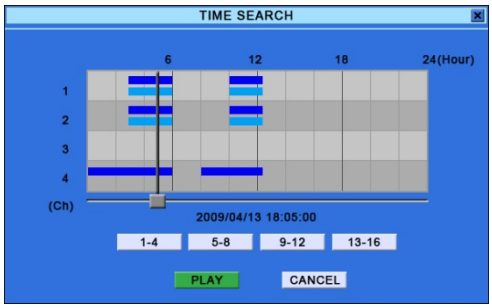
## 5.1 Playing Using Remote Control

5.1.1 Description on procedure to play using remote control

① Press the [▲P] button in the remote control at the live screen.
② After selecting the play icon shown at the top of the screen, press the [ ↵ ] button.
③ To play video for a desired time period, select [Calendar (Time) Search] at the play window and press the [ ↵ ] button.
④ Select and set up the date and time period.
⑤ Select the PLAY button and press the [ ↵ ] button.

* See Advanced User's Manual for detailed description on the use of other functions.





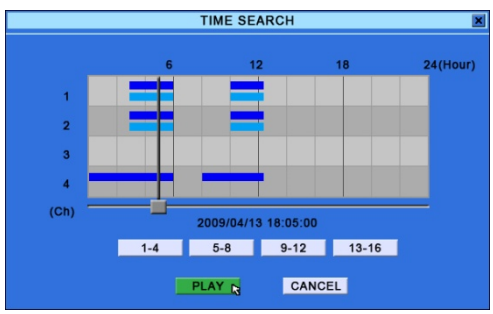

※ If the [▶▶(play)] button in the remote control at the live screen is pressed, play starts at 5 seconds from the end of recorded video.

## 5.2 Playing Using Mouse

5.2.1. Description on procedure to play using mouse

① Move the mouse cursor to the top of the screen at the live screen.
② After placing the cursor on the play icon in the menu shown at the top of the screen, click the left mouse button.
③ To play video of a desired time period, place the cursor on the [Calendar (Time) Search] button at the play window and click the left mouse button.
④ After selecting and setting up date and time period, place the cursor on the PLAY button and click the left mouse button.

* See Advanced User's Manual for detailed description on the use of other functions.

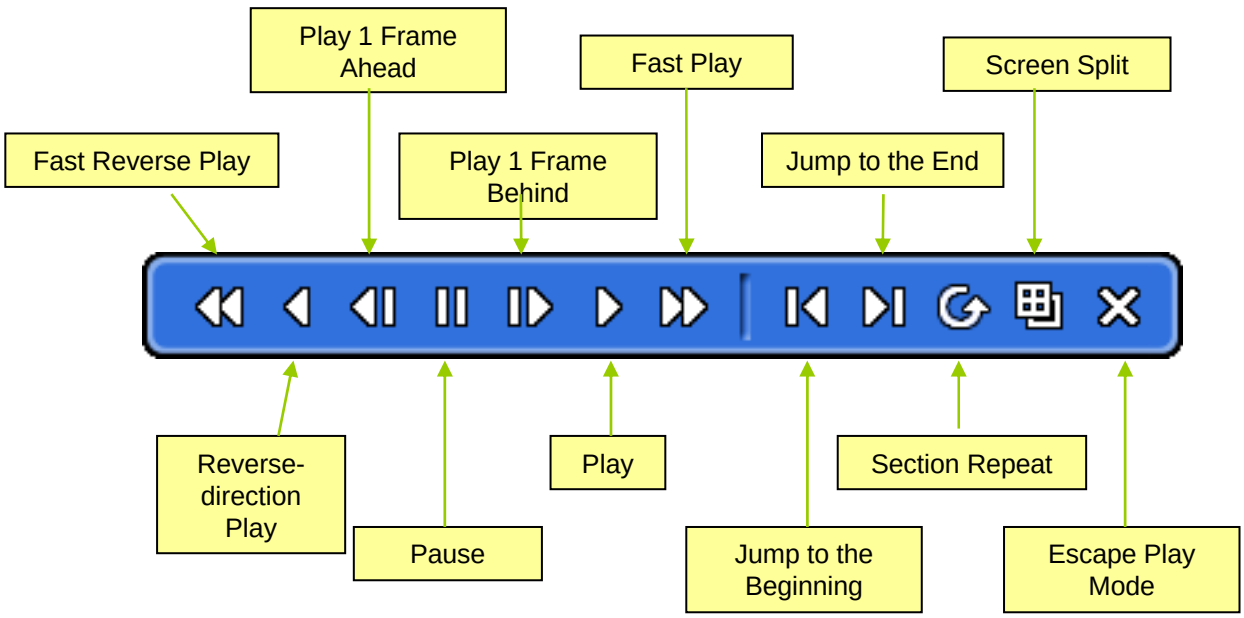


# 6 — Control Function During Playing

## 6.1 Controlling Using Menu at Bottom

6.1.1. Description on procedure to control using menu at bottom during playing

① Move the mouse cursor to the bottom area of the screen during playing.
② Video pictures can be controlled using the menu located at the bottom of the screen.




## 6.2 Controlling Using Remote Control

6.2.1. Description on procedure to control video pictures using [◀], [▶], [ II ], [◀◀] and [▶▶] buttons in the remote control during playing

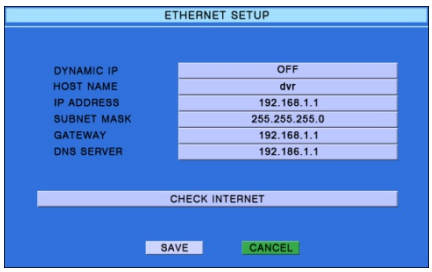
① [◀◀] , [▶▶] – Fast reverse-direction play, Fast play
② [ ◀ ] , [ ▶ ] – Reverse-direction play, Play
③ [ II ] + [ ◀ ] – Play 1 frame ahead
④ [ II ] + [ ▶ ] – Play 1 frame behind

# 7 — Web Client

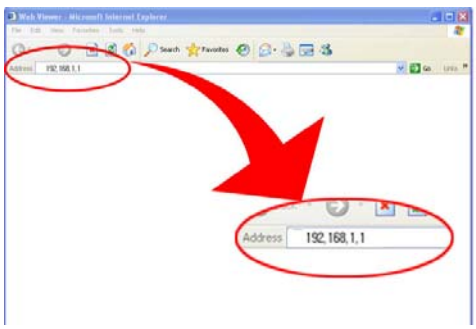
Software that monitors or controls video pictures of DVR at the PC connected to the network

## 7.1 Procedure to Connect to Web Viewer

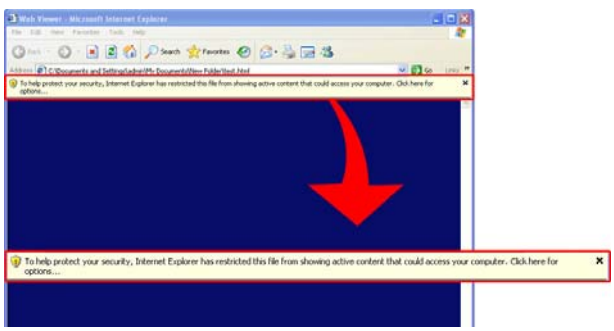
① To connect to the web viewer, the setup at the Ethernet setup window of DVR is required.



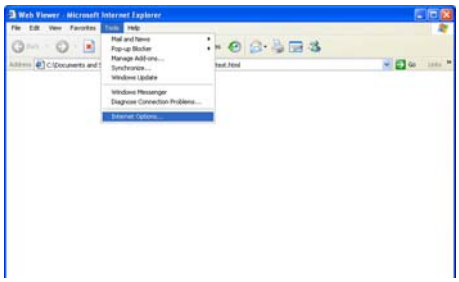

② At the Internet address window, enter the IP address of DVR to connect to.



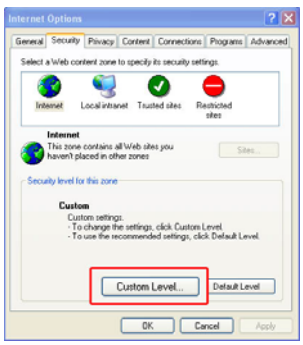

③ Install the ActiveX control by clicking the area in yellow at the top.



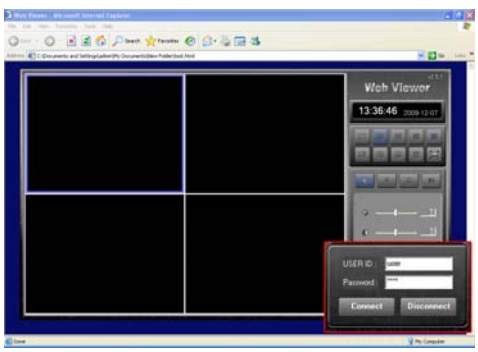
④ If the ActiveX control is not installed, select Tools > Internet Options.



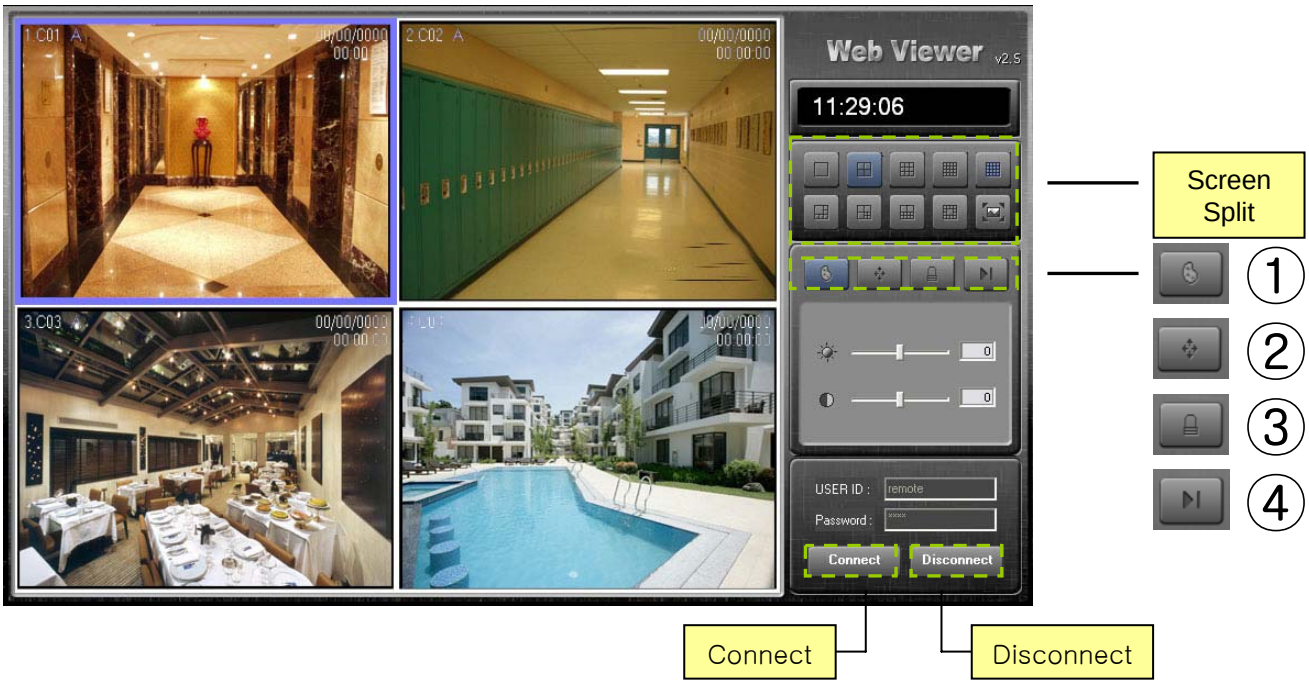
⑤ After selecting Security, click the custom level. From ActiveX control related items, change and set items set as 'Not applicable' to Confirm.



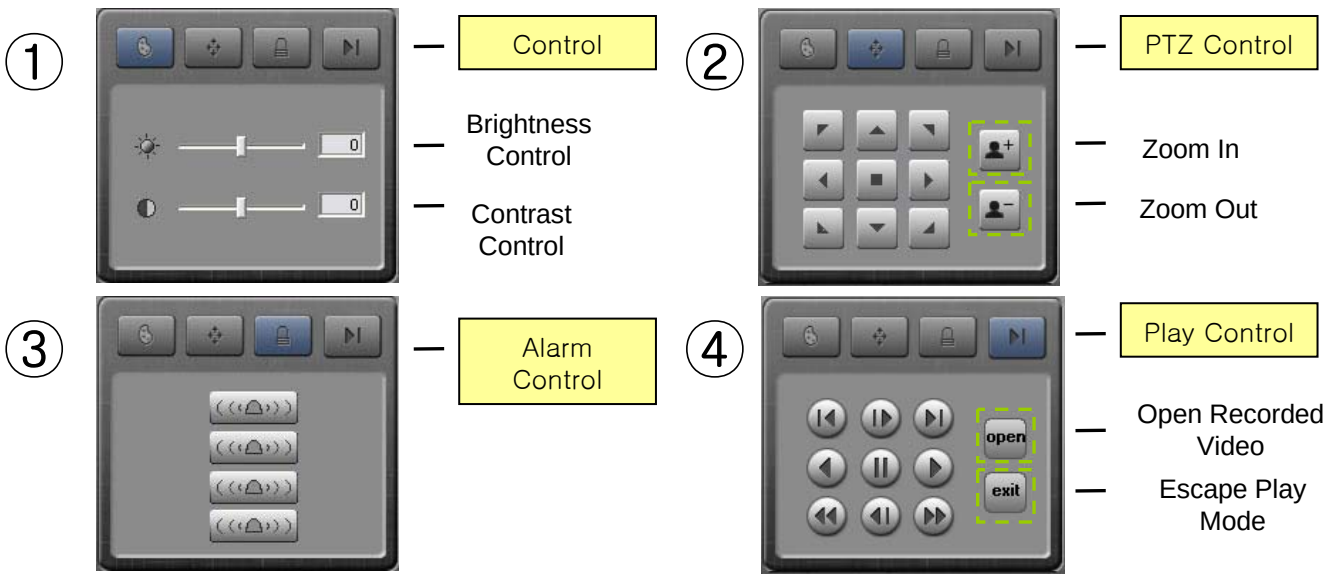

⑥ When the web viewer window is opened, enter an ID and a password. (The initial ID and password are 'remote' and '1111', respectively.



# 7.2 Web Viewer Function




※ The version shown in the screen may differ from an actual version.



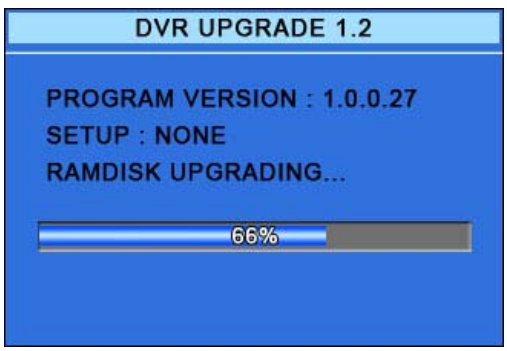
# 8 — Procedure to Install (Upgrade) Software

## 8.1. Description on Procedure to Install (Upgrade) Software

① Insert the USB memory stick that contains the installation file into the USB port A (Top).

※ It must be inserted into the USB port A (Top) to proceed upgrade.

② Reboot the product to upgrade.



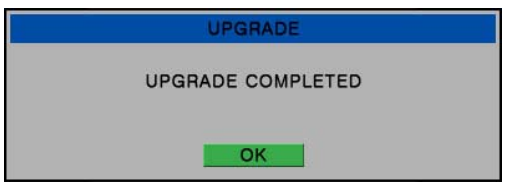

③ When the DVR upgrade window is opened, select “START” to start upgrade.

※ The version shown in the screen may differ from an actual version.

④ The progress of upgrading can be checked as shown in the figure.

⑤ When upgrade is completed, remove the USB memory stick and press the OK button to reboot the product.

※ If the OK button is pressed without removing the USB memory stick, upgrade will start again after rebooting.




⑥ After rebooting, upgrade completion is confirmed as shown in the figure.

# 9 — Procedure to Install Hard Disk

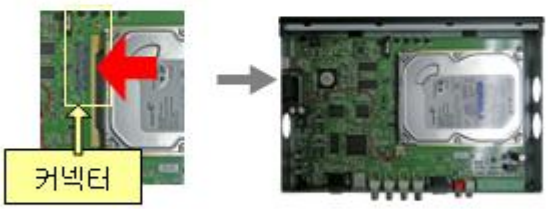
Only devices recommended by the supplier are used for the hard disk.
The hard disk type is SATA-II, and the jumper needs to be set with the SATA-II type according to each hard disk manufacturer's instructions.
The lifetime of the hard disk is different from the warranty period of DVR.

## 9.1 Description on Procedure to Install Hard Disk

① To install the hard disk, remove the top case screw using a screwdriver.

② Place the hard disk on the location shown in the figure.

③ Insert the hard disk fully into the connector as shown in the figure.




④Hold the hard disk firmly by using a hand to secure it into place.

⑤ While securing the hard disk using a hand, turn the product upside down.

⑥ Fix the hard disk with the hard disk fixing screw included in the product. (4-point)

⑦ Insert the top case from the front side as shown in the figure.

⑧ Close the top case cautiously so as not to get caught by the fan fixing screw.

⑨ Fasten the top case screw removed at step ①.

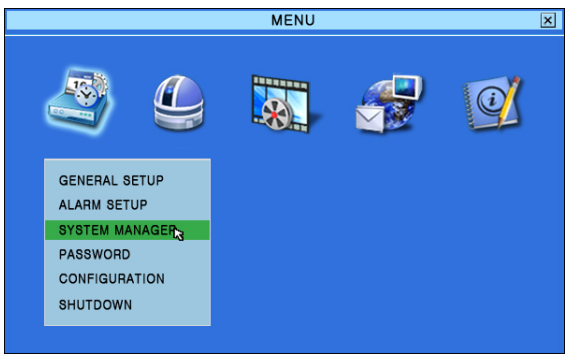
# 10 — Procedure to Initialize Hard Disk

After the hard disk is installed, it must be initialized.

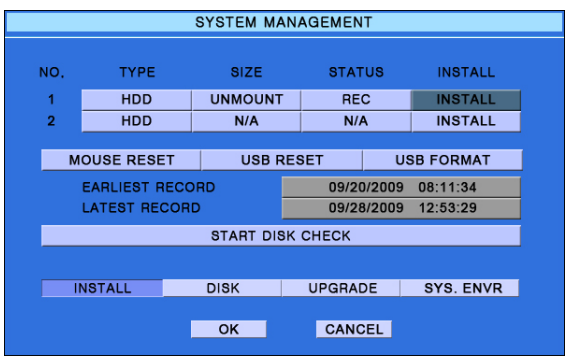
## 10.1 Description on Procedure to Initialize Hard Disk

① Press the setup icon (menu for administrator) in the menu at the top.

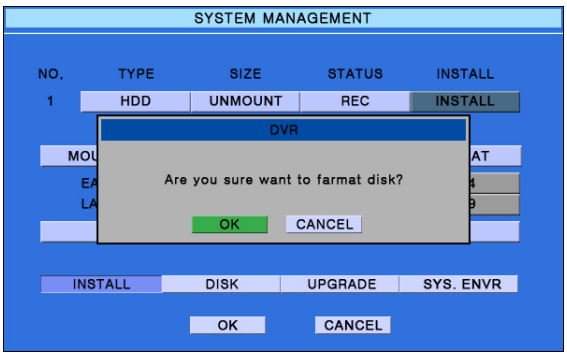
② Press System Management of the first icon in the menu.



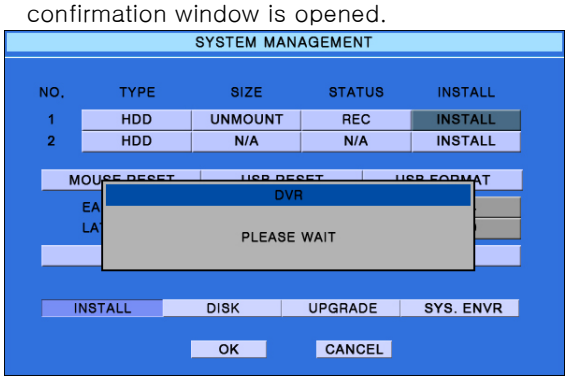

③ Press INSTALL of the corresponding hard disk.


SYSTEM MANAGEMENT
NO. TYPE SIZE STATUS INSTALL
1 HDD UNMOUNT REC INSTALL
2 HDD N/A N/A INSTALL
MOUSE RESET USB RESET USB FORMAT
EARLIEST RECORD 09/20/2009 08:11:34
LATEST RECORD 09/28/2009 12:53:29
START DISK CHECK
INSTALL DISK UPGRADE SYS. ENVR
OK CANCEL

④ Press the OK button when the dialog window in the figure is opened.

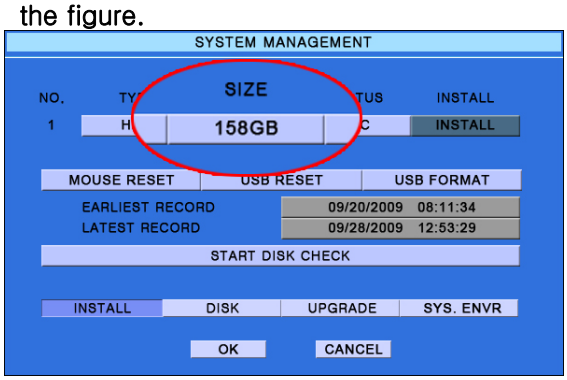



⑤ Initialization starts with the message window as shown in the figure. After the message window is closed, press the Confirm button when the restart confirmation window is opened.




⑥ After restart, it is ready for use when the hard disk capacity is displayed at SIZE.

※ The hard disk size may differ from the one in the figure.



# 11 — Product Specifications

| System Specification | | SLT-400 |
|---|---|---|
| Performance | | PENTAPLEX |
| Display Speed (NTSC / PAL) | | 120 / 100 fps |
| Recording Speed | Max. CIF (360*240)/(360*288) | 120 / 100 fps |
| | Max. HVGA (720*240)/(720*288) | 60 / 50 fps |
| | Max. VGA (720*480)/(720*576) | 30 / 25 fps |
| Video In | Signal Level | 1.0Vpp Composite (±10%) / 75 Ohm Balanced |
| | Channel | 4 ch (BNC) |
| Video Out | Main Display | 1 VGA (Resolution : 800x600, 1024x768, 1280x1024) |
| | Loop-Out / Spot | CCTV Out 1, Spot 1 |
| Audio | Input / output | 4 Line in (Terminal) / 1 Line out (Terminal) , Codec: PCM-8Kbps) |
| Alarm In/Out | DI / DO | 4 / 1, digital out ( 5 Vp-p) |
| Control Device | | PTZ Controller / Remote controller / USB mouse(PS/2 Type) |
| Details | | |
| Screen | Display Split | 1, 4 |
| | Interface | Graphic User Interface |
| Video | Format | NTSC / PAL Auto detection |
| | Codec | H.264(AVC) Standard |
| | Image Quality | Highest/ High/ Standard/ Low |
| | Recording type | Schedule / Continuous / Motion / Event (alarm, Videoloss) |
| Multi-Language Support | | English, Chinese, French, German, Spanish, Korean, Japanese, Italian, Portuguese, Russain, Dutch, Taiwan |
| System Reliability | Functions | Auto Recovery, Factory Default |
| | firmware Update | by USB or Network |
| Storage | Interface type | SATA II |
| | HDD / Capacity | Optional / 1 HDD |
| | Recording HDD mode | Write once / Overwriting |
| Connectors | USB port | USB port * 2 (A Port: Dedicated PS/2 Mouse, B Port: General USB Port) |
| | RS-232 | PTZ Controller Interface |
| | RS-485 | PTZ Camera, PTZ Controller Interface |
| Function | | |
| Motion | Area / Sensitivity | Adjustable(30x24 GRID) / 5 steps |
| Event | Source | Motion / Alarm In / Videoloss |
| | Action | Recording, e-Mail notification, Log file, Send message to Remote, Buzzer, Pop Up Widow, Alarm out, PTZ preset |
| | Pre/Post Alarm | 60 sec / 100 sec |
| PTZ | Signal input | RS 485 ( Local & Remote Control) / RS 232 |
| Search / Playback | Screen Split | 1, 4 |
| | Speed | x1, x2, x4, x8, x16 |
| | Mode | Normal / Single Step / Repeat |
| | Searching | Calendar / Channel Search / Time & Date / Event Search |
| | Other Playback | Live monitoring during playback, Playback camera change, Freeze |
| Back Up | file format | DVR Format |
| | Media | USB Device(HDD, Flash Memory) |
| Network | Protocol | TCP/IP(Dynamic IP Support), DHCP, DDNS |
| | Physical/Mac Layer | RJ45 (10/100 Mbps), Ethernet |
| | Max no. of connections | 10 User simultaneously |
| | Browser | SMS, Web Browser (Internet Explorer) |
| Hardware spec | Size (mm) | 295(W) x 182(D) x 35(H) |
| | Weight | 1 kg (Without HDD) |
| | Power | 100-240V(50/60Hz) 0.8A MAX, 12V Adaptor(MAX. 40 Watt) |

# 12 — Troubleshooting

| Symptom | Measures |
|---|---|
| In case no power is supplied | In case the power LED is not lighted, check the items listed below.<br>- Check power plug and outlet. (See p5.)<br>-Connect the power adapter jack to the power connector of the product properly.<br>-Use only the adapter provided with the product. (See p8.) |
| In case no surveillance video is provided | -Connect the camera picture cable to the video input of the product properly. (See p8.)<br>-Check if the monitor cable is connected properly. (See p8.)<br>-Check camera power and lens settings.<br>-As this may be caused by a simple temporary error, reboot the product.<br>-As product settings may be wrong, initialize the product.<br>※ Initialization procedure<br>1. Main Menu > Configuration > Select Default Load > Select O.K > Select O.K<br>!! Note: Initialization will change DVR settings to the state before installation. If necessary, save the current settings before initialization. |
| In case the mouse does not work | - Check if the USB mouse supports PS/2.<br>-Connect the mouse to the USB port (B) at the bottom correctly. (See p7.)<br>-Run 'USB Mouse Reset'. (See the figure in p19.)<br>(It can be set up at [System Manager] Menu. ) |
| In case the record function of DVR does not operate | In case the record LED does not flash, check the items listed below.<br>-If hard disk space is not sufficient, recording cannot be done.<br>- Delete recorded videos in the hard disk or activate the overwrite function. (See p19.)<br>-The hard disk may have failed. Install again after replacing it. (See p18.)<br>-Check if the settings allow recording. (See p12.) |
| In case the network cannot be connected | In case the network LED flashes, check the items listed below.<br>-Check if the network hub or router operates properly.<br>-Check if the network connection cable is connected properly.<br>-Check the network settings such as IP. (See p15.) |

| | |
|---|---|
| In case the remote control does not work | - Check if the battery polarity is correct.<br>- Check the ID setting of the remote control. (See p9.)<br>- When using the remote control, direct it towards the remote control sensor of the product. (See p7.)<br>- Use the remote control within 7 meters from the product.<br>- Use the remote control after replacing batteries. |
| In case sound is not heard | - Check the status of mic and audio cable. (See p8.)<br>- Check if the power of the speaker connected to the audio cable is switched on.<br>-Set DVR's audio to on at the Cameo menu.<br>(It can be set as on by selecting the channel where the audio cable is connected.)<br>※ The Cameo menu shows up by clicking the right mouse button. |
| In case no sound is heard during playing | -Set audio recording to on.<br>(If it is set to off, sound is not heard during playing.)<br>-In case there is no audio input, no sound is heard even if the record icon is lighted.<br>※ Audio record settings can be changed at Main Menu > Record Setup. |